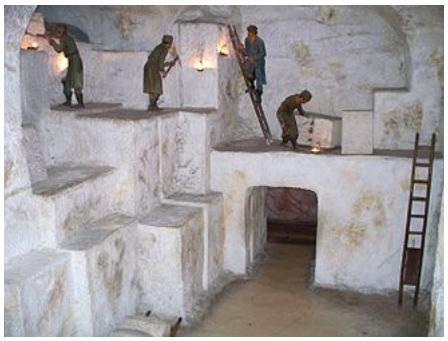
Salt mining

Salt mining extracts natural salt deposits from underground. The mined salt is usually in the form of halite (commonly known as rock salt), and extracted from evaporite formations.[1]

Modern rock-salt mine near Mount Morris, New York

History



Diorama of an underground salt mine in Germany.

Inside Salina Veche, in Slănic, Prahova, Romania. The railing (lower middle) gives the viewer an idea of scale.

Before the advent of the modern internal combustion engine and earth-moving equipment, mining salt was one of the most expensive and dangerous of operations because of rapid dehydration caused by constant contact with the salt (both in the mine passages and scattered in the air as salt dust) and of other problems caused by accidental excessive sodium intake. Salt is now plentiful, but until the Industrial Revolution, it was difficult to come by, and salt was often mined by slaves or prisoners. Life expectancy for the miners was low.

The earliest found salt mine was in Halstatt, Austria where salt was mined 5000BC.

Ancient China was among the earliest civilizations in the world with cultivation and trade in mined salt.[2] They first discovered natural gas when they excavated rock salt. The Chinese writer, poet, and politician Zhang Hua of the Jin dynasty wrote in his book *Bowuzhi* how people in Zigong, Sichuan, excavated natural gas and used it to boil a rock salt solution.[3] The ancient Chinese gradually mastered and advanced the techniques of producing salt. Salt mining was an arduous task for them, as they faced geographical and technological constraints. Salt was extracted mainly from the sea, and salt works in the coastal areas in late imperial China equated to more than 80 percent of national production.[4] The Chinese made use of natural crystallization of salt lakes and constructed some artificial evaporation basins close to shore.[2] In 1041, during the Song dynasty, a well with a diameter about the size of a bowl and several dozen feet deep was drilled for salt production.[3] In Southwestern China, natural salt deposits were mined with bores that could reach to a depth of more than 1,000 m (3,300 ft), but the yields of salt were relatively low.[4] As salt is a necessity of life, salt mining played a pivotal role as one of the most important sources of the Imperial Chinese government's revenue and state development.[4]

Most modern salt mines are privately operated or operated by large multinational companies such as K+S, AkzoNobel, Cargill, and Compass Minerals.

Mining regions around the world

The Crystal Valley region of the Khewra Salt Mines in Pakistan. With around 250,000 visitors a year, the site is a major tourist attraction.

A small mosque made of salt bricks inside the Khewra Salt Mines complex

Large hole drilling rig for blast-hole drilling at salt mine Haigerloch-Stetten

Some notable salt mines include:

Country	Site(s)
Austria	Hallstatt and Salzkammergut.
Bosnia and Herzegovina	Tuzla
Bulgaria	Provadiya; and Solnitsata, an ancient town which Bulgarian archaeologists regard as the oldest in Europe and the site of a salt-production facility approximately six millennia ago.[5]
Canada	Sifto Salt Mine[6] in Goderich, Ontario, which, at 1.5 miles (2.4 km) wide and 2 miles (3.2 km) long, is one of the largest salt mines in the world extending 7 km^2 (2.7 sq mi).[7][8]
Colombia	Zipaquirá
England	The "-wich towns" of Cheshire and Worcestershire.
Ethiopia, Eritrea, Djibouti	Danakil Desert, where manual labor is used.[9]
Germany	Rheinberg, Berchtesgaden, Heilbronn
Republic of Ireland	Mountcharles
Italy	Racalmuto, Realmonte and Petralia Soprana[10] within the production sites managed by Italkali.
Morocco	Société de Sel de Mohammedia (Mohammedia Rock Salt company) near Casablanca
Northern Ireland	Kilroot, near Carrickfergus, more than a century old and containing passages whose combined length exceeds 25 km.
Pakistan	Khewra Salt Mines, the world's second largest salt-mining operation, spanning over 300 km. It was first discovered by a horse of Alexander the Great. The mine is still operation till today.
Poland	Wieliczka and Bochnia, both established in the mid-13th century and still operating, mostly as museums. Kłodawa Salt Mine.
Romania	**Slănic** (with Salina Veche, Europe's largest salt mine), Cacica, Ocnele Mari, Salina Turda, Târgu Ocna, Ocna Sibiului, Praid and Salina Ocna Dej.
Russia	• Solikamsk in Perm Krai (European Russia)

	• Seregovo in the Komi Republic (European Russia)
Ukraine	Soledar Salt Mine in Soledar, Donetsk oblast.
United States	• Hutchinson, Kansas, underground mining began at Hutchinson in 1923 as the Carey Salt Company. In 1990 the Hutchinson Salt Company formed, then purchased the mine. In 2005 the Strataca salt mine museum and *Underground Vaults & Storage* constructed a new 650 feet (200 m) shaft to an older part of the mine for tours and storage. Also, Lyons Salt Company and Compass Minerals is located in Lyons, Kansas, and Independent Salt Company is located in Kanopolis, Kansas. • Avery Island, Louisiana • Cleveland, Ohio, 1,700 feet (520 m) beneath the lake shore, and extending 3 miles (4.8 km) under Lake Erie, the mine began production in 1958 and has been operated by Cargill since 1997.[11] • Detroit, Michigan, 1,100 feet (340 m) beneath which the Detroit Salt Company's 1,500-acre (6 km^2) subterranean complex extends[12] • Livingston County, New York, location of American Rock Salt, the largest operating salt mine in the United States with a capacity for producing up to 18,000 tons each day.[13] • Syracuse, New York earned the nickname "The Salt City" for its salt mining, an activity that continues in the region to the present day.[14] • Grand Saline, Texas has a Morton Salt mine. It is one of the largest in the world. • Houston, Texas, near Minute Maid Park is a newly discovered saltworks. • Saltville, Virginia, the site of one of the Confederacy's main saltworks.

Idiomatic use

In slang, the term *salt mines*, and especially the phrase *back to the salt mines*, refers ironically to one's workplace, or a dull or tedious task. This phrase originates from c. 1800 in reference to the Russian practice of sending prisoners to forced labor in Siberian salt mines.[15][16]

See also

Salt mines

- Khewra
- Schacht Asse II
- Turda
- Wieliczka
- Windsor

General

- Salt evaporation pond
- Brine mining
- Injection well
- Salt lake
- Salt dome
- Miner

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External links

- Mohammedia Rock Salt Company (https://ssm.ma)

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